Amendments to the Specification:

Please amend the paragraph beginning at page 1, line 13, as follows:

"Neuronal synapses" refer to morphologically asymmetric junctions between neurons, and are central to neurotransmission. They actively modify their ~~adhesion~~ efficacy according to neural activity, and modulate the efficiency of neurotransmission at presynaptic and postsynaptic membranes. A postsynaptic density (PSD) is a specialized region that lines postsynaptic membranes at excitatory synapses, and where scaffolding molecules such as PSD-95 as well as neurotransmitter receptors and ion channels are present in large numbers. PSDs are thought to be deeply involved in functions of the nervous system, such as morphological changes of neurons and neuronal plasticity (Y. Yoshimura and T. Yamauchi (1997) J. Biol. Chem. 272: 26354; S. Stack *et al.* (1997) J. Biol. Chem. 272: 13467; Siekevitz *et al.* (1985) Proc. Natl. Acad. Sci. USA 82: 3494-8; Walch and Kuruc (1992) J. Neurochem. 59: 667-8). In particular, clustering and localization of membrane proteins within neurons is important for neuronal development and synapse formation. Therefore, proteins that interact with such membrane proteins are thought to influence spatial cellular distribution of membrane proteins, regulation of synaptic activities, and modulation of neurotransmitter receptor functions.

Please amend the paragraph beginning at page 7, line 33, as follows:

Such a nucleotide chain of the present invention can be used as a probe for detecting or isolating, or as a primer for amplifying, the polynucleotides of the present invention. The nucleotide chain normally consists of 15 to 100, and preferably 15 to 35 nucleotides when used as a ~~primer~~ probe, and at least 15 and preferably 30 nucleotides when used as a primer. A primer can

Please amend the paragraph heading at page 21, line 26, as follows:

<Analysis of mPrickle gene expression regulatory region>

Please amend the paragraph heading at page 24, line 11, as follows:

[Example 3] Isolation and identification of the ~~TritonX-1114~~ TritonX-114 insoluble fraction

Please amend the paragraph beginning at page 25, line 7, as follows:

The results showed an approximately 23% homology of MS733 with D-Prickle. Accordingly, the present MS733 protein was named Rat Prickle (R-Prickle). Comparison of D-Prickle and R-Prickle at the amino acid sequence level is shown in ~~Fig. 2~~ Figs. 2 and 3. The amino acid sequences of R-Prickle and D-Prickle are shown as SEQ ID NOs: 1 and 3, respectively. R-Prickle of the present invention consists of 847 amino acid residues, and has one PET domain in the N terminus, and three LIM domains (Figs. 2 ~~and 3~~ 3 and 4). This structure is well conserved in the Prickle family (Fig. ~~3~~ 4).

Please amend the paragraph beginning at page 25, line 23, as follows:

Next, the mPrickle portion consisting of amino acid residues 365 to 618 was expressed as a GST fusion protein for preparation of rabbit antiserum. The antiserum was affinity-purified, and used as an anti-Prickle antibody for Western blotting. See, the Ohtsuka *et al* method (Ohtsuka *et al.* (2002) "Cast: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with RIM1 and munc 13-1." J. Cell Biol. 158: 577-90), for detailed procedures for antibody preparation. As a result, two bands were observed in the brain sample (Fig. ~~4~~ 5). With prolonged exposure, a signal was also detected in the skeletal muscle sample. This suggests that R-Prickle is strongly expressed in the brain.

Please amend the paragraphs beginning at page 26, line 2, as follows:

Subcellular fraction (10 μg protein) was subjected to SDS-PAGE, and Western blotting with the anti R-Prickle antibody. The subcellular fraction was prepared according to the Ohtsuka *et al.* method (Ohtsuka *et al.* (2002) "Cast: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with RIM1 and munc 13-1." J.Cell Biol. 158: 577-90). The results showed that R-Prickle was highly concentrated in the PSD fraction, as is the case of NMDA receptors (Fig. ~~5~~ 6).

[Example 7] R-Prickle solubilization

Next, solubilization of R-Prickle was carried out using amphoteric (1% CHAPS [Nacalai Tesque]), non-ionic (1% NP40 [Nacalai Tesque], 1% Triton-X100 [Nacalai Tesque]), and ionic (1% SDS [Nacalai Tesque], 1% DOC [Nacalai Tesque]) surfactants. R-Prickle was prepared according to the Ohtsuka *et al.* method (Ohtsuka *et al.* (2002) "Cast: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with RIM1 and munc 13-1." J. Cell Biol. 158: 577-90). The results showed that while R-Prickle was hardly solubilized in CHAPS, NP-40, and TritonX-100, it was partially solubilized in DOC, and almost completely solubilized in SDS (Fig. ~~6~~ 7). Accordingly, R-Prickle was suggested to bind strongly to the cytoskeleton in synaptic junctions.

[Example 8] R-Prickle expression at each developmental stage

Brain homogenates of ~~R-Prickle~~ rats at developmental stages from embryonic (E18) to postnatal (P70) were applied to SDS-PAGE.

The brain homogenates were prepared from rats (Japan SLC Inc.) according to the method described in Example 5. Western blotting was then performed using the anti R-Prickle antibody. The results revealed that the R-Prickle expression reached its peak at P14 (Fig. ~~7~~ 8).

[Example 9] R-Prickle localization in primary cultures of neurons

R-Prickle localization in primary cultures of rat embryo hippocampal neurons was examined using the anti R-Prickle antibody. Cells cultured for 28 days were fixed and co-

stained with synaptophysin (a presynaptic membrane marker), bassoon (an active zone marker), and PSD-95 (a postsynaptic membrane marker) (Ohtsuka *et al.* (2002) "Cast: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with RIM1 and munc 13-1." J. Cell Biol. 158: 577-90) (Fig. ~~8~~ 9). The localization of R-Prickle closely matched with those of the markers, and was consistent with that of PSD-95 in particular, suggesting that R-Prickle is localized to postsynaptic membranes.

Please cancel the present "SEQUENCE LISTING", pages 1/24-24/24, and insert therefor the accompanying paper copy of the Substitute Sequence Listing, page numbers 1 to 9, at the end of the application.